

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A driving ~~controlling~~ control method ~~of~~ for a linear compressor, ~~wherein a~~ the method comprising:

determining when the compressor is compression processing and suction processing based on a maximum value of a current and a phase angle variance; and

applying an appropriate firing angle is respectively applied at the time of a ~~during~~ compression processing and ~~a~~ during suction processing, ~~according to a~~ respectively, based on a detected load state.

2. (Canceled).

3. (Currently Amended) The method of claim 2, ~~wherein a stroke is varied at the time of the 1, further comprising varying a stroke during~~ compression processing, and ~~a performing~~ full stroke control having a maximum distance between an upper dead point and a lower dead point of a piston is performed at the time of the ~~during~~ suction processing in case of during a high temperature load operation.

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4. (Currently Amended) The method of claim 1, ~~wherein further comprising~~ ~~decreasing a firing angle is decrease thus so as to increase a stroke at the time of the during~~ compression processing ~~in case of a~~ in high temperature load operation.

5. (Currently Amended) The method of claim 1, further comprising ~~the steps of~~ detecting a load of the linear compressor; ~~determining whether the comparing the detected load is more than to a~~ standard load; performing a variable capacity control ~~for and~~ varying a stroke when the detected load is ~~more greater than a~~ the standard load; and performing a full stroke control having a maximum distance between an upper dead point and a lower dead point of a piston when the detected load is less than ~~a~~ the standard load.

6. (Currently Amended) The method of claim 5, wherein ~~the performing variable capacity control further comprises determining when the compressor is~~ suction processing and ~~the compression processing are determined on the basis of a~~ based on a maximum value of a current and a phase angle variance, and decreasing a firing angle ~~is decreased thus so as to increase a stroke at the time of the during~~ compression processing ~~in the step of controlling the variable capacity~~.

7. (Currently Amended) A driving ~~controlling~~ control method ~~of~~ for a linear compressor, the method comprising the steps of:

detecting a voltage and a current generated at a linear compressor;

~~receiving the detected voltage and current and thus detecting a~~ determining a present voltage/current phase difference ~~of a corresponding time point based on the detected voltage and current;~~

~~comparing a~~ the present voltage/current phase difference ~~of a~~ present load state with a standard voltage/current phase difference ~~of a~~ standard load state; and

~~controlling a stroke by a~~ performing variable capacity ~~for~~ stroke control and varying a stroke when the present voltage/current phase difference ~~of a~~ present load state is more greater than the standard voltage/current phase difference ~~of a~~ standard load state, and decreasing a stroke when the present voltage/current phase difference ~~of a~~ present load state is less than the standard voltage/current phase difference ~~of a~~ standard load state.

8. (Currently Amended) The method of claim 7, wherein ~~the step of controlling a stroke by a~~ performing variable capacity stroke control comprises ~~the steps of:~~

~~determining a~~ whether the compressor is compression processing or ~~a~~ suction processing by detecting a maximum value of a current and a phase difference variance; and

~~decreasing a firing angle thus~~ so as to increase a stroke ~~at the time of the~~ during compression processing, and maintaining a firing angle ~~thus~~ so as to maintain a full stroke having

a maximum distance between an upper dead point and a lower dead point of a piston ~~at the time of the~~ ~~during~~ suction processing ~~as a result of~~ ~~based on~~ the determination.

9. (Currently Amended) A driving ~~controlling~~ ~~control~~ apparatus of a linear compressor, the apparatus comprising:

~~an electric circuit unit for driving that drives~~ a linear compressor by varying a stroke ~~by a~~ and a corresponding piston movement;

~~a voltage/current detecting unit for detecting~~ detector that detects a voltage and a current generated ~~at~~ by the electric circuit unit;

~~a phase difference detecting unit for receiving~~ detector that receives a voltage and a current from the voltage/current ~~detecting unit~~ detector and ~~thus detecting~~ detects a voltage/current phase difference ~~of~~ at a corresponding time point in time; and

~~a stroke controlling unit for receiving~~ controller that receives a phase difference from the phase difference ~~detecting unit~~ and ~~applying~~ detector and applies a stroke voltage to the electric circuit unit by differently applying ~~a~~ based on the received phase difference, wherein the ~~stroke~~ controller applies a different firing angle at the time of a ~~during~~ compression processing ~~and a~~ than ~~that applied~~ during suction processing~~[[,]]~~ respectively on the basis of the ~~inputted~~ based on the received phase difference.

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10. (Currently Amended) The apparatus of claim 9, wherein the stroke ~~controlling unit~~ controller applies a stroke voltage ~~for increasing~~ ~~that increases~~ a stroke to the electric circuit ~~unit~~ at the time of the ~~during~~ compression processing, and applies a stroke voltage ~~for controlling by a corresponding to~~ full stroke ~~control~~ having a maximum distance between an upper dead point and a lower dead point of a piston to the electric circuit ~~unit~~ at the time of the ~~during~~ suction processing.

11. (Currently Amended) The apparatus of claim 9, wherein the stroke ~~controlling unit~~ controller comprises:

a microcomputer ~~for comparing a~~ ~~that compares a~~ present voltage/current phase difference detected ~~from~~ ~~by~~ the phase difference detecting ~~unit~~ ~~detector~~ with a ~~standard~~ voltage/current phase difference at the time of a standard load, thereby differently applying a ~~and applies a different~~ firing angle at the time of the ~~during~~ compression processing and the ~~than~~ ~~that applied~~ ~~during~~ suction processing~~[,]~~ respectively, and thus outputting ~~based on the comparison~~, and outputs a switching control signal according to ~~based on~~ the stroke voltage; and

a memory ~~for previously storing~~ ~~that receives and stores~~ a stroke voltage value corresponding to a voltage/current phase difference.

12. (Currently Amended) The apparatus of claim 11, wherein the stroke ~~controlling unit~~ controller performs variable capacity ~~for varying stroke control to~~

vary a stroke when a present voltage/current phase difference of a present load state is more greater than the standard voltage/current phase difference at the time of a stand load, and decreases a stroke when a present voltage/current phase difference of a present load state is less than the standard voltage/current phase difference at the time of a stand load.

13. (Currently Amended) The apparatus of claim 9, wherein the electric circuit ~~unit~~ switches an alternating current to a ~~train thus~~ triac to drive the linear compressor.